

B R E V I O R A

Museum of Comparative Zoology

CAMBRIDGE, MASS.

January 27, 1956

NUMBER 51

A SMALL MUSTELID FROM THE THOMAS FARM MIOCENE

By STANLEY J. OLSEN

INTRODUCTION

For the past ten years the Museum of Comparative Zoology has conducted field work at the Thomas Farm (Florida) for at least one season each year. During the latter part of this decade an intensive search has been made with the view of increasing our knowledge of the microfauna of this unique Miocene deposit. Although minute vertebrate fossils have been collected from every part of the excavation, by far the most productive area has been the boulder bar described by Dr. T. E. White in 1942. The material — mammal, bird and reptile — occurs here in the matrix between the boulders of Ocala limestone comprising the bar, and the latter have served to prevent the crushing and breakage elsewhere characteristic of the quarry.

Three large mustelids have been described from this area by White: *Mephititaxus ancipidens* 1941, *Aelurocyon spissidens* 1947 and *Oligobunis floridanus* 1947. The isolated upper molars referred to by White in 1942 (M.C.Z. Nos. 3639, 3640) as mustelids, have been re-identified as deciduous teeth of a canid. The lower jaws, without teeth, mentioned by him (M.C.Z. Nos. 7029, 7030) are conspecific with the specimen here described.

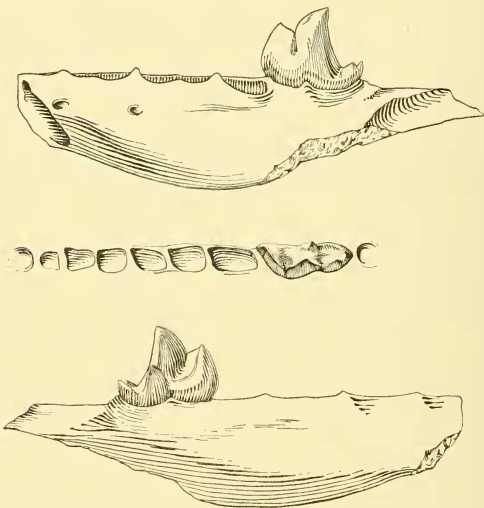
This individual, although incomplete, marks the first occurrence of associated mandible and tooth in a small mustelid from this locality.

Family MUSTELIDAE
Subfamily MUSTELINAE

MIOMUSTELA (?) sp.

Referred material. M.C.Z. No. 7016 (Fig. 1), incomplete left mandible with M_1 present and alveoli for C, P_1 , P_2 , P_3 , and M_2 (incomplete).

Horizon and locality. Arikareean Miocene. Thomas Farm, Gilchrist County, Florida.



Miomustela (?) sp. Labial, occlusal and lingual views. M.C.Z. 7016. X 3.

Characters. Closest to *Miomustela madisonae* (Douglass 1903; Hall 1930) among previously known forms but differing as follows: M_1 with metaconid smaller, all other crown elements 25 per cent larger.

Description. The mandible is short and shallow and the number of premolars is reduced to three. All of the premolars are

double rooted and their arrangement indicates a crowded tooth row. M_1 has a large well-defined protoconid with a pronounced cleft between the protoconid and paraconid. The metaconid is about one-half the size of the paraconid. The talonid is basined, with a well-defined rim and the hypoconid retains its individuality. The hypoconulid is small but distinct. The paraconid-protoconid shear is nearly parallel with the long axis, making the protoconid-metaconid width narrow as compared with the tooth length. M_2 is single rooted. The ascending ramus of the jaw starts just posterior to M_1 , causing M_2 to be tilted upward and forward. The masseteric fossa extends forward to the anterior rim of the alveolus of M_2 . Mental foramina are present below the centers of P_1 and P_2 .

MEASUREMENTS (IN MILLIMETERS) OF MANDIBLE & TOOTH	
LENGTH OF TOOTH ROW AS INDICATED BY ALVEOLI (ANTERIOR MARGIN OF P_2 TO POSTERIOR MARGIN OF M_1)-----	18.0
DEPTH OF MANDIBLE BELOW M_1 -----	5.7
M_1 , GREATEST ANTEROPOSTERIOR DIAMETER -----	6.0
M_1 , GREATEST TRANSVERSE DIAMETER-----	2.5
M_1 , HEIGHT OF PROTOCONID FROM LABIAL MARGIN OF ALVEOLUS -----	5.0
M_1 , " " METACONID " LINGUAL " " " -----	2.5
M_1 , " " PARACONID " " " " -----	3.5
M_1 , " " HYPOCONULID " " " " -----	1.7

DISCUSSION

Plesictis (including *Mustelavus*) agrees with M.C.Z. No. 7016 in the general structure of M_1 , but *Plesictis* has the metaconid and paraconid of equal size, and a jaw that is longer (with four premolars) and lighter in build, the ascending ramus arising well behind M_2 (Teilhard de Chardin 1914; Viret 1929; Clark 1937; Simpson 1946; Hall 1951; and original material).

Agreement of our specimen with *Miomustela* is closer than with *Plesictis*—sufficient at least to justify tentative generic assignment. Minor differences between the type of *Miomustela* and M.C.Z. No. 7016 are an apparently lower paraconid and talonid

in the type. I believe that these are due to the unworn condition of the described specimen, compared with the worn cusps of the type. This is based on study of the amount of wear undergone by M_1 in a large series of *Martes americana*, the essentially similar cusp arrangement shared by this genus and *Miomustela* permitting a valid comparison. This series shows that such differences may indeed be due to wear.

The species represented by this fragment is clearly distinct from *M. madisonae* but, considering the fragmentary nature of available specimens, I refrain from proposing a new species. Further material may, in fact, show that a new generic assignment is necessary.

Acknowledgments. I am indebted to Professor A. S. Romer for the use of the material and to Professor Bryan Patterson for his helpful criticism. Also to Dr. J. LeRoy Kay for the loan of the type of *Miomustela*. The figure was drawn by Miss Patricia Washer.

REFERENCES

CLARK, J.

1937. The stratigraphy and paleontology of the Chadron formation in the Big Badlands of South Dakota. *Ann. Carnegie Mus.*, **25**: 261-350.

DOUGLASS, E.

1903. New vertebrates from the Montana Tertiary. *Ann. Carnegie Mus.*, **2**: 145-199.

FILHOL, H.

1879. Étude des mammifères fossiles de Saint-Gérard le Puy (Allier). *Bib. Ecole Hautes Études, Sect. Sci. Nat.*, **19**: 1-252.

HALL, E. R.

1930. Three new genera of Mustelidae from the later Tertiary of North America. *Jour. Mam.*, **11**: 146-154.
1951. American weasels. *Univ. Kansas Publ., Mus. Nat. Hist.*, **4**: 1-466.

SIMPSON, G. G.

1946. *Paleogale* and allied early mustelids. *Amer. Mus. Nov.*, **1320**: 1-14.

TEILHARD DE CHARDIN, P.

1914. Les carnassiers des Phosphorites du Quercy. *Ann. Paléont.*, **9**: 103-192.

VIRET, J.

1929. Les faunes de mammifères de l'Oligocène supérieur de la Limagne Bourbonnaise. Ann. Univ. Lyon, (n.s. 1), sci. med., **47**: 5-305.

WHITE, T. E.

1941. Additions to the Miocene fauna of Florida. Proc. New England Zool. Club, **18**: 91-98.
1942. The Lower Miocene mammal fauna of Florida. Bull. Mus. Comp. Zool., **92**: 1-49.
1947. Additions to the Miocene fauna of North Florida. Bull. Mus. Comp. Zool., **99**: 497-515.